

PERO '19 DIES IN SEAPLANE CRASH

PROFESSOR A. BATES OF TECHNOLOGY DEAD

Former Professor of English Literature at the Institute Succumbs After a Long Illness

WAS BIG SUCCESS AS AUTHOR

Ario Bates, professor of English literature at Technology, from 1893 to 1915, and author of many very widely read books, died, after a long illness, last Saturday at the Des Brisay Hospital at 38 Newbury street. Prof. Bates



THE LATE PROFESSOR ARLO BATES

home was at 4 Otis place, Boston. Ario Bates was born in East Machias, Me., Dec. 16, 1850, son of Dr. Niran and Susan (Thaxter) Bates. He received the degree of S. B. at Bowdoin College in 1876, A. M., in 1879, and Litt. D. in 1894.

He came to Boston in the autumn of '76, established himself in an attic and began to write, while knowing less than a dozen people in Massachusetts. Ario Bates was then 26 years old. He was saturated with Shakespeare, the Bible, Scott, Longfellow and the classics. While in college he was the editor-in-chief of the Bowdoin Orient, and got a story or two printed in the magazines.

Young Bates' first efforts in literature in his Boston attic would have discouraged one less confident and ardent in his vocation. He wrote with painful and unflagging persistency and with unvarying ill-success. Of enthusiasm and zeal he had plenty, but these very qualities rendered him inattentive to essential details. Finally, when the pile of rejected M's. had grown to considerable proportions he got a foothold in the magazines.

On Sept. 5, 1882, he married Harriet L. Vose of Brunswick, Me. She died in 1886.

Prof. Bates was editor of the Boston Sunday Courier from 1880 to 1893, when he began a long period of highly valuable service at Technology.

Prof. Bates' work as an author extended over a period of nearly 30 years. "Patty's Perversities," which appeared in 1881, was one of the first of his books to attract attention. Many more followed, from time to time, up to 1908, among them being "A Wheel or Fire," "Sonnets in Shadow," "The Philistines," "A Book o' Nine Tales," "Told in the Gate," "The Torch Bearer," "Talks on Writing English," "The Puritans," "Love in a Cloud," "The Diary of a Saint" and "The Intoxicated Ghost."

The Congress authorized an issue of \$2,000,000,000 W. S. S. to be sold in 1918. The purpose of the Stamps was two fold: (1) To get money for the Government for war needs; (2) to instill the habit of thrift in the American people and by the practice of thrift save labor and materials for the Government.

U. S. ARMY WANTS 90,000 OFFICERS BY NEXT JULY

That the War Department will need 90,000 officers of all ranks between now and next July for service with the Army overseas and at home and that most of these must come from the colleges and universities was announced at the conference in San Francisco Aug. 23 between Western educators and the military authorities, by Maj. W. R. Orton of the General Staff.

Of this number 20,000 are urgently needed for the field artillery, 2000 for the engineers and 600 for the quartermaster department, he said. The plan as outlined by Maj. Orton contemplates the induction into the student Army training corps of all men of draft age, who register from student bodies.

Divisions into two classes A and B will then be made. In the former will be placed men having completed a grammar school course for special training, while in class B will be placed those who have completed high school courses. Intensive military instruction and special collegiate work will be given them.

Those who show immediate qualifications for commissions will be sent to officers' training camps; those who give promise will be allowed to continue their course until they qualify for detailed to such camps; those who show no capacity for command will be withdrawn and sent to depots for military service in the ranks, according to Maj. Orton.

NEW TECHNOLOGY "ACE"

Lt. Montgomery '18 Writes of Work in France

The following clipping has been received from a sister of Donald H. Montgomery, who is a Technology man, Class of 1919. Montgomery received his ground school training at the University of Illinois last summer and from there went to Toronto to a flying school, from which place he was transferred to Fort Worth, where he completed his final advanced flying under the instruction of Vernon Castle. He sailed for overseas duty the latter part of March, and at the present time is a First Lieutenant with the 12th Aero Squadron. The clipping reads as follows:

"The pilots were all ready to fly their machines across the country to the new post, and while I sat and watched, one after another of them went into the air, and started on their long flight. There was a distance of 70 kilometers, and one of the machines driven by Donald Montgomery of Rutland, Vt., made the trip in 44 minutes. Major Bureton was commanding officer, and Donald Montgomery is the acknowledged 'Ace' among the flyers. He is a wonderful flyer."

Montgomery in a letter to his sister said, "War is most ripe in these parts because we are now in the middle of the Boche attacks. We have kicked the Hun out of the air, and the Dough Boys are wiping up the ground with them. All and all the Boche seems quite fed up with the Americans. Only 5 of the original 18 pilots in our squadron remain, and only three of us are flying at the present time. I feel like quite 'un ancien' among all the new pilots. When I am the last one left I am going to quit action flying and take a rest. There is such a thing as working one's guardian angel too long and too hard. I know that mine is grey-haired now."

We expect, as a matter of course, that our soldiers and sailors will do as they are ordered. We oftentimes do not think it necessary to do what our Government asks us to do. Why should we not be just as prompt in our response? Our men are ordered to expose themselves to the guns of the Huns. We are asked only to save and to lend our savings to the Government. Can we refuse this request?

Institute Junior Meets His Death in Seaplane Accident While Doing Patrol Duty Near Long Island Shore—Searchers Have Found No Trace of Pero or His Two Companions—Machine With Which He Collided Reaches Shore Safely

ENLISTED IN FIRST YEAR

Ensign Donald C. Pero, a member of the Class of 1919 at Technology, met with his death in an airplane collision last Saturday evening off Fire Island. Pero was flying in a navy seaplane with two other men, doing patrol duty, in the aviation service at Rockaway Beach, L. I., when he collided with an airplane operated by Ensign H. Stevens.

Pero's machine is believed to have sunk immediately after falling into the water. Mine sweepers searched the vicinity, but could discover no trace of the crew or of the plane.

Ensign H. Stevens, piloting the other plane, landed safely on the water with his mechanic and assistant and aided in the unsuccessful search.

Collision Was in a Fog

The Navy Department issued this statement:

"A seaplane was wrecked and the crew of three are missing as a result of a collision with another plane about 7 o'clock Saturday night, 12 miles southeast of Fire Island Light vessel, in a fog, the Navy Department was informed today.

Following the collision both planes went into a tail spin. The one commanded by Ensign H. Stevens landed immediately and for 40 minutes searched for the survivors of the other plane, but found no trace of any of the crew. Ensign Stevens' plane was later towed safely into port.

"The other plane, commanded by Ensign Donald C. Pero, went straight down after the collision and disappeared. The other two members of the crew, who are missing, are W. C. Jagel, chief machinist mate, and F. A. Newman, machinist mate, first class.

"Mine sweepers and patrol vessels searched the vicinity for the missing men."

Pero is the son of Mr. and Mrs. George E. Pero, Springfield, Mass. He enlisted in the naval aviation service while in his first year at Technology. He trained at Miami, Fla. He has a brother, Joseph, a photographer in the naval aviation service.

HEALTH DEMONSTRATION

Institute Alumnus Carries on Important Work

Dr. Donald B. Armstrong, who was graduated from the Biology and Public Health Course of Technology with the Class of 1913, has been carrying on a very successful health demonstration at Framingham, Massachusetts, for the past year.

The idea of a community experiment in the treatment of tuberculosis originated in the mind of Dr. Lee K. Frankel of the Metropolitan Life Insurance Company, after consideration of the distressing fact that more than sixteen per cent of the deaths in the company's industrial department were chargeable to this disease. Through him, the company offered the National Association for the Study and Prevention of Tuberculosis a special fund of \$100,000 for the purpose of conducting an experiment, over a period of three years, in the control of the malady in a representative community of approximately 15,000 inhabitants.

The National Association accepted the offer at once, on June 1, 1916, after a careful study of many towns, Framing-

(Continued on Page 4)

PHI BETA EPSILON SELLS ITS OLD BEACON STREET PROPERTY

D. Bradley Rich & Clark, of the Journal Building, report the sale of 237 Beacon street, consisting of a twenty-room brown-stone and brick house and 2552 square feet of land, located between Clarendon and Dartmouth streets. The property was the former home of the Phi Beta Epsilon fraternity, one of Technology's elite Greek letter societies, which embraces in its membership such prominent names as the DuPonts of Delaware, W. A. Hopkins of Boston and a score of others.

Since the Institute moved to Cambridge, the fraternity has occupied spacious quarters at 400 Charles River Road in Cambridge, but a short distance from the "Great White City" on the Charles.

14TH MARINE SCHOOL

55 Men Already Signed Up For Latest Group

Another very large group of men have registered for the fourteenth of the Marine Engineers' Training Schools of the United States Shipping Board under the care of Professor Edward F. Miller '86, at Technology, the tally at the end of the first lecture being fifty-five, with one or two more expected, but not yet in attendance. This group of future Marine Engineers replaces one graduated the previous week of about equal size. The later schools are notable for the quality of the men that are attracted to them, and in this one there are sixteen of the men applying for positions as second assistant engineer and three who intend to qualify themselves for the place of first assistant.

These schools are getting at the results which were the hope of Mr. Henry Howard '89, when he suggested the idea of securing good material in men and experience, so that by comparatively little intensive work there would be available managers of the engine rooms of the new merchant marine. In the present group are about a score of machinists; five men who have been engaged in the construction of marine engines; fifteen men who have had experience with stationary engines; one locomotive engineer who has been a dozen years in the cab; five men who have had stations in the Navy, and who seek to improve their positions; four men from engine rooms at sea in which they have spent up to ten years of their lives and two or three familiar with the engine rooms of river steamboats or of tug-boats in the different harbors of this and other countries.

The assembly represents not only Boston, Greater Boston and half a dozen of the manufacturing centres of Massachusetts, but similar centres of New Hampshire, Rhode Island and Connecticut, with one representative from the Middle States who has had extensive experience in the nearer Orient. Promptly at nine o'clock these men received their first lecture and later in the forenoon a second one with an hour's interval in which to write up notes. The course is just four weeks in length and a month hence the fifteenth school will be established.

One of the important and rapidly developing departments of the United States Shipping Board Recruiting Service is the free sea service bureau, which with national headquarters in Boston and agencies in leading ports of the Atlantic, Gulf, Great Lakes and Pacific is establishing a new epoch in the maritime world.

All graduates of the free schools in navigation and marine engineering maintained by the shipping board are shipped for sea duty through this bureau, through which experienced seamen,

(Continued on Page 4)

TECHNOLOGY S. M. A. WILL BE ABOLISHED

Government Decides to Remove Army School To Make Room For Further Expansion of Naval Aviators

GRADUATED MANY FLIERS

The imminent cessation of the Technology School of Military Aeronautics at the Institute as a result of the recent War Department announcement, is in accordance with the new plan of concentration. It is the intention of the Government to close this and several other schools of the kind retaining only one each for north, south, east and west, the colleges retained being Princeton University, the University of Illinois, the University of California, and the University of Texas, located at Trenton, New Jersey; Urbana, Illinois; San Francisco, California, and Austin, Texas, respectively.

The schools at Cornell, Ohio State University and Technology have given most excellent and efficient service, but their facilities are greatly needed for other war training. Training schools which confine their work to ground training are those schools in which the mechanical and theoretical divisions of aviation are taught exclusively.

Extensions on a large scale will be made at the four ground schools retained.

In two or three weeks the aviators studying now at Technology will be graduated and it is not the expectation that they will be replaced.

S. M. A. Established in May, 1917
It was in May, 1917, that the War Department established schools of military aeronautics at a number of colleges, the Institute among them. The colleges receiving such students assumed the responsibility of lodging and

(Continued on Page 4)

LAUNCHING AT SQUANTUM

The Laub, which is the third destroyer built at the Squantum plant of the Bethlehem Shipbuilding Corporation, took to the water last Sunday morning at eleven thirty o'clock. This boat was named for Midshipman Henry Laub, who was killed on board the U. S. Lawrence in the battle on Lake Erie, 1813.

Several Technology men have been working on the Laub for the past few weeks, among whom are: R. C. Johnson as a shipfitter's helper, J. T. Martin as a chipper, S. M. Silverstein as a heater, J. B. Ford as a caulker, and R. Kennedy as a driller, all of the Class of 1921.

The sponsor was Miss Marjorie Mohun, a relative of the naval hero for whom the vessel was named. The christening ceremony was performed with a bottle of champagne, tied with ribbons of red, white and blue.

The official party in attendance included Rear-Admiral Spencer S. Wood, commandant of the First Naval District, and Commandant W. R. Rush of the Boston Navy Yard, and staffs. Among the special guests were Mr. and Mrs. John L. Mohun of Brooklyn, N. Y.; Mr. and Mrs. Henry Leet and their daughter Miss Virginia Leet, of Providence, and Dr. and Mrs. Siegle Roush of Troy, N. Y.

The work on the ships at the Squantum plant is not progressing as rapidly as was expected. This is largely due to the tremendous shortage of skilled labor and also to the inefficient management of the help which the corporation already has. There seems to be a lack of spirit or interest among the employees in the endeavor to turn out ships as rapidly as possible to help win the war. What is apparently of more importance to the shipworkers is the question of more money for less work.

The Tech

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IN CHARGE THIS ISSUE

Carole A. Clarke '21 Night Editor

WEDNESDAY, AUGUST 28, 1918

WHAT CAPTAIN KEVENEY SAYS

THERE seems to be more or less unrest among the lower classmen at the present time. Their one idea, and of course being red blooded Americans, the natural one, is to get into the service. The thought of today's glory outshines tomorrow's honors. For it is certain that a student who completes his studies here at the Institute will be of more value to his country as an officer than if he drops his studies and joins the "Colors" now.

The authorities at Washington recognize the necessity of college students completing their education by forming the "Students Army Training Corps."

The war is not over yet nor will it be for some time to come, and as time goes on the need of mature and properly qualified officers will increase. The best material for officers will come from the graduates of colleges. Why not stick to your studies and help your country?

CHARLES KEVENEY.

—M—I—T—

PROFESSOR PEABODY'S WAR WORK

ONE of the strangest things in human nature is the propensity to value and admire whatever is at a distance. It is strange but true that comparatively few of us recognize the value and importance of what is going on about us in everyday life. Thus, while we are going about praising the work of overseas commanders, the shipping board and what not, Technology and Technologists are quietly proceeding under our very noses with war work of the highest importance.

For example one Technologist who has filled at one time several positions, requiring in addition to responsibility a great deal of hard work, is Professor Peabody, the head of Course XIII. During the summer following our entrance into the war, Professor Peabody was chosen to head the academic board of both the Naval and Army Aviation Schools. At that time, Professor Peabody had just graduated a class in an intensive course in Naval Architecture, a course into which he had put all his energy, and without a rest or vacation, he went ahead with organizing the instruction staff and getting the two new schools under way.

In the fall, due to the stress of work occasioned by the regular courses, Professor Peabody withdrew from the Army School, but has continued with the Naval School to this moment. In addition to all this, Professor Peabody has gone on with all his regular and intensive courses, turning out from the start of the war up to last June about one hundred and twenty-five shipbuilders of which fifty percent have been commissioned in the United States Navy.

The training he has given these men is of more importance to the government than would appear at first thought. It requires about one thousand ships on the sea at all times to supply a million men across the water. Therefore, as our overseas forces grow there is a constant demand for more ships, and without men trained to build ships and to do so quickly, we must stop sending men across or let them starve.

Professor Peabody has at present ten men in training. One is a Lieutenant in the Russian Navy, another a Lieutenant in the Japanese Navy, and a third a Captain in the Spanish Navy. The remainder are enlisted in the United States Navy.

PERSONALS

Raymond J. McGill, a student at Technology prior to his enlistment, has just received his commission as a lieutenant in the Flying Section of the United States Army Aviation Corps. He is the son of Mr. and Mrs. Arthur McGill of Roxbury, Massachusetts, and is well known in the summer colony at Kennerly, where the family spends its summers.

Lieutenant McGill is one of the youngest, if not the youngest, of the commissioned officers in the Army. He was born on March 16, 1899, and is, therefore, in his nineteenth year. McGill was a member of the Institute Class of 1921, for which he prepared at Boston College. After his enlistment last term, he was sent to Payne Field, West Point, Mississippi, where he recently finished his training, and was subsequently commissioned. Lieutenant McGill is the first member of the Class of 1921 to receive a commission in the Service.

Mr. and Mrs. Carl Barth announce the marriage of their daughter Erica, to Dr. Frank Stanton Cawley of Cambridge. The wedding took place Saturday evening at the house of Miss Louisa Loring Dresel, 328 Beacon street. The bride was attended by Mrs. Charles James Cawley of Belmont as matron of honor and Miss Anna Lamprecht of Plandome, L. I., as bridesmaid, and her father gave her away. Mr. Charles J. Cawley was his brother's best man. The Rev. D. D. Addison, rector of All Saints' Church, Brookline, performed the ceremony. The groom is the oldest son of Mr. and Mrs. Frank E. Cawley of Cambridge. He is a graduate of Harvard, class of '10, and received the Ph. D. degree from the same university in 1916. He taught for five years at Harvard after studying in Europe, and is now an instructor in modern languages at Technology. Dr. and Mrs. Cawley have gone to the White Mountains for a month's trip.



UNIVERSITY OF VIRGINIA—The University of Virginia, one of the oldest universities of the South, and the recognized leader in southern intercollegiate athletics, has voted to revive sports. The action is expected to cause practically all of the southern colleges to return to all branches of sports.

BOSTON UNIVERSITY—Early enrollment indicates that the College of Business Administration of Boston University, opening Sept. 23, will continue to hold its place as the greatest growing college in the United States. In spite of war-time conditions, an entering class of 300 students is expected in addition to an evening class of regular and special students of about the same size. Dean Everett W. Lord looks for a fall term student body of 1500 and a winter term minimum of 2000.

In a few weeks an officer of the United States army will arrive at the College of Business Administration to complete arrangements for the military education of all the young men who are physically fit to drill. The war department has assigned 600 complete uniforms and equipment, which will be supplied to students without charge. At the end of the coming college year there will be military training in Plattsburg during the six weeks of which the student soldiers will receive pay.

Dean Lord has been advised from Washington that a lowering of the draft ages will not interfere with the plans of the department educational policy and that the younger students will not be called upon for immediate service of an active type.

LEHIGH UNIVERSITY—Dr. H. S. Drinker, president of Lehigh University, reports that there has been a very large number of applicants for admission to the university's three-year war courses entitling graduates to degrees in engineering and arts and science. He pointed out that, while these new courses cover the full schedules formerly given in four years, sufficient time is nevertheless afforded.

Lehigh now has a full quota of student representatives at the government camp at Plattsburg, N. Y., where they are receiving training that will equip them to assist army officers at the University next year in the war department instruction in military drill and science.

COMMUNICATION

Pittsburg, Pa.,
August 18, 1918.

To the Editor of THE TECH:—

Dear Sir,
I have seen the discussion that has been going on as to the youngest captain in the service from Technology. No one has spoken of J. Paul Gardner '17. Captain J. P. Gardner was sent to France as a 1st Lieutenant, C. A. C., last December. In May, 1918, he received his commission as captain, dated from January 15, 1918. Captain Gardner will be 23 years old on October 16th, 1918. This makes him captain at the age of 22 years and 4 months.

His chum, James E. Wallis '17, was commissioned a captain at the same time, with a commission dating from January, also. Captain Wallis was 23 on January 6th, 1918.

Both of these boys are younger than anyone I have seen mentioned in THE TECH up to this time.

Capt. Gardner is now with Battery H, 53rd Artillery, C. A. C., U. S. A., A. E. F. Capt. Wallis has transferred to the Aerial Observation Service of the Artillery.

Yours sincerely,
(Signed) Gretchen A. Palmer '18.

CARLISLE INDIAN SCHOOL—Followers of football will be sorry to hear that the Carlisle Indians will be seen on the gridiron no more. This is not because the game has been abolished at the school, but that the institution has been done away with. Officials of the Department of the Interior found that the school cost the Government too much to operate and recommended that it be abolished. The students will be sent to Haskell Institute and other western schools modeled after Carlisle. The school buildings will be turned into a hospital for the rehabilitation and re-education of sick and wounded soldiers.

Carlisle has sent many a famous athlete into the arena and many a famous football player on to the gridiron. Benj. Pierce, F. M. Pleasant, James Thorpe, Albert Exendine, Hudson, Pierce, Houser, Gardner, Dillon, Lubo, Welsh, Guyon, these and many more will be remembered for their exploits on the football field. It was at Carlisle that Glenn Warner rose to the height of his coaching prowess.

Perhaps the most picturesque game in which Carlisle ever figured was the contest in which Harvard was beaten in the Stadium in 1903. Dillon took the ball on the kickoff and ran 103 yards for a touchdown and the game. He hid the ball under a specially prepared jersey and ran past all the Harvard men without their knowing that he was carrying the pigskin. That ruse resulted in legislation which made such tactics illegal.

UNIVERSITY OF CHICAGO—Two hundred and seventy-one students will be candidates for diplomas at the University of Chicago at the One Hundred and Eighth Convocation to be held Friday, Aug. 30. Of these, nine will receive the two-year certificate in the College of Education. In the Colleges of Arts, Literature and Science ninety-four bachelor's degrees will be conferred; eight in the College of Commerce and Administration; and thirty-five in the College of Education, a total for the Colleges of 137.

In the Law School six candidates will receive the degree of Doctor of Law (J.D.). In the Divinity School ten candidates will receive the degree of Master of Arts, three that of Bachelor of Divinity, and four that of Doctor of Philosophy, a total for the Divinity School of seventeen. In the graduate schools there will be fifty-eight candidates for the degree of Master of Arts, twenty-two for that of Master of Science, and twenty-two for that of Doctor of Philosophy, a total for the Graduate Schools of 102. The total number of degrees to be conferred is 262.

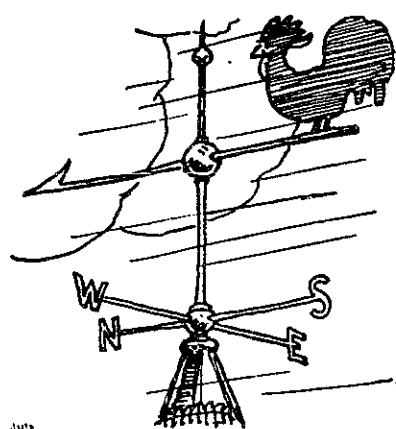
Of those receiving degrees, three are Chinese, two men and one woman, all of whom will receive the degree of Master of Science; and one Japanese woman will receive the degree of Master of Arts.

Lowell Textile on New Basis

During the past year the Lowell Textile school has been placed by the engineering bureau of the war department upon its approved list of technical institutions giving courses that will properly prepare men for officers' commissions in this branch of the service. This acceptance carries with it the provision that students of sufficiently high standing may enlist in this branch of the service and continue their school work until graduation. A similar arrangement was made by the engineering branch of the navy, permitting students of certain courses to enlist in the reserve corps, thereby placing them in a deferred class not to be called except in case of an emergency. In this way students may prepare themselves for positions in times of peace or war.



Which Way
Is The Wind
Blowing at
Technology ??



IS THE OFFICIAL
WEATHERVANE
OF THE ALUMNI
OF TECHNOLOGY.

IT GETS WIND OF
HAPPENINGS

"OVER THERE."

IT WILL TELL

YOU WHEN YOUR

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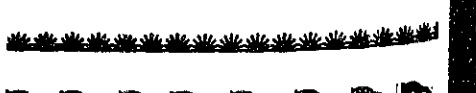
SEND A

DOLLAR AND A

HALF FOR

SIX MONTHS'

SUBSCRIPTION.



SIGNAL CORPS SUPPLIES THE DELICATE INSTRUMENTS USED BY ARMY AVIATORS

Small But Important Aids to Aerial Navigation Are Included in American Airplanes; Now Developing New Device

ARMY CO-OPERATES WITH MANUFACTURERS

Before an airplane can be put into military service it must be equipped with one or more delicate aeronautic instruments, some of which are absolutely essential to exact flying, and all of which contribute to the successful operation of the plane. Without them a pilot would soon lose his location as to height and direction; he would not know his speed through the air, the speed of his propeller, the amount of gasoline in his tank, the temperature of his cooling water, or if his oil was circulating. He could not tell whether he was banking properly on his turns. These comprise the necessary flying instruments, but an aviator could not fly to any great height without another valuable instrument, an oxygen supplying apparatus, nor could he operate his guns, signal headquarters, release his bombs, or "shoot" his cameras without additional mechanisms.

Two Sets Sometimes Necessary
All these instruments must be ready for installation on the air planes as soon as they are assembled, for no plane is complete without them. In some instances, particularly for the two seaters and the heavy bombing machines, two and even three instruments of each sort are necessary, totaling sometimes as many as twenty-three, but for ordinary work only about nine of them are needed. The average cost of a set of navigation instruments for a single plane is \$350.

For operation of actual combat planes, such as observing, photographing, bombing, and fighting planes, many other complicated and expensive instruments are necessary. Among them are machine guns, gun mounts, synchronizers, bomb racks, bomb-dropping devices, bomb sights, radio, photographic, and oxygen apparatus, electrically heated clothing, lights, and flares. The cost of such additional accessories would bring the total cost of equipment for a plane to several thousand dollars each, depending upon the type of plane. But these devices will not be discussed in detail here.

One Purchasing Center
The Signal Corps is purchasing practically all the purely navigating instruments and selling them at cost to the manufacturers of the airplanes as they are needed to meet the actual output of planes. This provides one purchasing center and prevents the various airplane companies and the Government from competing against one another, creating disorder and confusion among the instrument manufacturers. At the same time it enables the Signal Corps to keep the supply of instruments adequate for the demands of the airplane builders, relieving them from this work, and also affords standard equipment and interchangeability.

Foreign Models Improved Upon
When the American air program began to be developed none of the instruments now so vital to the service as being produced in quantities, and some of them were not being produced at all. Over sixty per cent of these instruments had to be developed from foreign models, and the remaining forty per cent was secured by modifying or remodeling American automobile-type instruments. Numerous and serious difficulties were encountered in designing instruments, capable of quantity production, of the lightest possible weight and under exacting requirements as to accuracy. During this pioneer work new instruments were being developed abroad almost daily, each new design carrying an improvement. Most of the work in this connection as done by the Signal Corps in connection with manufacturers. All available information and data were collected, foreign and domestic models and types were carefully tested, designs were standardized, and specifications prepared. Results show that types for every class of instruments have been adopted and put into production here. Greater standardization has been achieved than exists in Europe today, leading to increase quantity production materially and decrease the number of replacement parts necessary.

New Sources of Supply
Quantity production on the scale necessary demanded the enlargement of all existing sources of supply and the creation of many new plants and factories. A certain amount of time was available before it was necessary to use these instruments on planes in service—the planes themselves had to be built. Accordingly, order were placed from three to eight months ahead of requirements, to get in such quantities as would insure a steady production, owing to the

certainty of improvements in the various designs. The early plans of the production department have developed from two to five sources for each instrument, established both as a safety measure and as a means of placing future orders on a strictly competitive basis.

Some of the Instruments
Various instruments developed by the Signal Corps include: The tachometer, or revolution counter, is an instrument which indicates the number of revolutions per minute at which the engine is running. Unlike the speedometer on an automobile, it does not translate revolutions into miles per hour; another instrument gives the speed in relation to the air. When instrument matters were taken up last July there were no tachometers manufactured in this country of the type which has proven most successful abroad; namely, the escapement or chromatic type. Two large manufacturing companies are now turning out these instruments in large quantities, one of them 100 a day, and a third company has also in production a new centrifugal type.

The Air Speed Indicator
The air speed indicator is a pressure gauge for showing the speed of the plane in relation to the air, not the earth. This instrument includes what is known as a Venturi-Pitot tube, which is fastened to a strut and takes in the air from ahead. The air sets up a corresponding pressure in an auxiliary tube, which is calibrated and indicated on a dashboard recording pressure gauge. The altimeter is an aneroid barometer, guaranteed to read height above the earth instead of pressure. Under standard specifications a reduction in weight and size was effected in the manufacture of these instruments, which are now being produced in large quantities and of a quality equal to the best foreign make. Three standard types are made, with ranges of 20,000, 25,000, and 30,000 feet. Production is now over 500 a week.

The Airplane Compass
After much experimental work the airplane compass has not yet reached the perfection desired. A new type, having advantages over any present form of compass, especially as to compactness, is now used. In the development of this instrument effort has been made to reduce the weight to the safest possible minimum and to decrease the space required in the airplane. One concern is now turning out compasses at the rate of 200 a week. Due to the development which had been made in clocks for automobiles, it was only necessary to standardize a design of mounting in order to adopt such clocks to airplanes. Sufficient quantities are now available for all needs. Instrument-board pressure gauges were already manufactured here in large quantities, and as soon as standard specifications were developed production started. Two types are used, one to register the air pressure which forces the gasoline to the engine and the other to show the pressure produced in the oiling system by the oil-circulating pump. Standard forms of cases and dials with interchangeable glasses and bezels have been designed.

The Radiator Thermometer
The radiator thermometer is mounted on the instrument board, where it indicates the temperature of the cooling water in the engine. Undue heating shows that the engine is not running properly or that more water is needed. Thermometers of this type, made here, were, and still are, being submitted to extensive tests. Efforts were also made to stimulate the trade toward developing more accurate and reliable instruments, and now a sufficient supply is available from two sources.

The banking indicator is an instrument used to show when a plane is correctly banked in making a turn. Spirit level, balance, and gyroscopic types are being used. The problem of indicating the extent to which a plane is inclined to the horizontal in the air is a very complicated one. No simple solution has yet been reached. Fortunately, it is not often necessary to determine whether the plane is exactly horizontal, except in connection with bomb dropping. Development work is under way which it is hoped will lead to improvement of devices already in use abroad. The Aldis sight, which is used in connection with fixed guns firing through the propeller, has been copied, as regards its optical features, from an Eng-

lish instrument; but the construction has been modified in such a way that the behavior of the instrument in actual use will probably be very much improved. After a number of tests and experiments satisfactory instruments are now available. The makers have been assisted in recomputing the lenses to suit the optical glass available in this country. The illumination of these sights for night operation is also being studied.

Standardization of Parts
In connection with the design of the above instruments it has been found possible, without delaying production, to standardize them to a much greater extent than has been done abroad. In this way the number of necessary replacement of parts has been considerably reduced, and a uniform type of dial has been adopted which, as to legibility, will be equal to the best that has so far been used. All finished instruments are carefully tested before being mounted on the planes. Among other things, safety belts for pilots, observers, and gunners have been designed and are now in production; radio and photographic apparatus, ordnance devices, and oxygen apparatus have also been developed and put in course of manufacture.

S. A. T. C. TRAINING CAMP AT PLATTSBURG FILLED Twenty-two Students Selected as Acting Second Lieutenants

The organization of the Students' Army Training Corps Camp is now complete with a complement of about 350 students, mostly members of the Reserve Officers' Training Corps college units. The full quota allowed for the camp has been exceeded by close to 100, but the overflow will be allowed to remain. Twenty-four companies have been organized and formed into two students' training regiments of three battalions each, and from the companies have been picked men to form classes for machine gun, bayonet, bombing and adjutants' instruction, 50 men to the class. While the preliminary instruction in infantry has been going on for two weeks, the real work in all branches begins on Monday.

Twenty-two students, who were here in the first camp in June and come from colleges where military training had been given for some time, have been selected by Col. Dentler to serve as acting second lieutenants for the period of the camp, but their privileges will be that of other students. These men will not be saluted and will wear a silver button on the right side of the olive drab shirt collar.

Of the number selected two are from New England. They are Curry S. Hicks, Amherst, Mass., of Co. A, and Reginald G. Harris, Manchester, N. H., of Co. O.

Night Guard Tours Started
Night tours of guard duty were started last night with 150 students, a hot lunch being served them at midnight. The students will have the actual care of the Army reservation from now on, as the 22d Regiment detachment here is soon to join its unit at another camp. Three of the training battalions—the second and third of the 1st Regiment and the second Battalion of the second Regiment have battalion parades on Wednesday, Thursday and Friday, and the 1st Battalion of the 1st Regiment parades Mondays with the 1st Battalion of the second Regiment on Wednesday. Second Lieut. Roger W. Thompson is an addition to the camp staff as senior instructor in automatic rifle work. He is one of the officers who has been returned from General Pershing's forces in France to instruct in methods employed on the other side.

The athletic field program to be held Labor Day, September 2, has been completed and includes the following events: 100-yard dash, 220-yard dash, 440-yard run, 880-yard run, mile run, pole vault, high jump, broad jump, equipment race, bayonet race, relay race. Trials for these events will be held as soon as possible. One man in each event will be allowed to compete for each company.

NAVAL RIFLE RANGES HAVE BEEN OPENED TO CIVILIANS

In a letter sent to the governors of all states, Secretary Daniels called attention to the fact that all naval rifle ranges, except when within the limits of a station, are open to state troops and civilians for purposes of practice and expresses the hope that as many citizens as possible will avail themselves of the opportunity. The service of naval instructors are placed at the disposal of those using the ranges, the courses or instruction being the same as laid down for the regulars. Records of firing will be maintained and individuals will be furnished with official certificates of qualification. Where facilities exist, civilians may stay on the ranges for the entire course.

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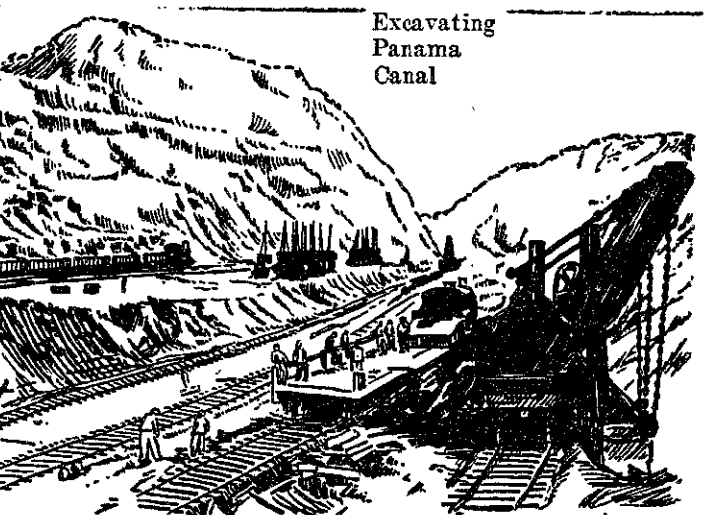
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14TH MARINE SCHOOL

(Continued from Page 1)

engineers, cooks and stewards seeking an opportunity to serve at sea are helped to a berth.

Not the least important of the bureau's activities is its inspection service, recently established for the purpose of insuring proper living conditions on American merchant ships. In the work of this inspection service the bureau has the hearty co-operation of the steamship owners, who operate their vessels under the direction and authority of the shipping board.

FRAMINGHAM HEALTH WORK

(Continued from Page 1)

ham was selected as best fulfilling the requirements. The work started out with a declaration of war on disease in December, 1916. The problem was approached in a scientific manner and the co-operation of the inhabitants made the undertaking a great success. A comparison of the figures for previous years showed a great reduction in the number of deaths and cases of sickness. The campaign was directed by Dr. Armstrong, who has also been director of the Department of Social Welfare of the New York Association for Improving the Condition of the Poor.

S. M. A. TO BE ABOLISHED

(Continued from Page 1)

feeding the men, and at Technology the aviators were furnished with dormitories that were formerly the large drafting rooms in the Civil Engineering wing, also the museum, library and the reading room. These rooms, equipped with simple sleeping outfits, have since that time been the homes of the students of the School of Military Aeronautics. The professors of Civil Engineering gave up their offices for the administration of the school, toilets and showers were established on a liberal scale in the basements and class rooms and drawing rooms were requisitioned for the needs of the school.

After three or four months of the birdmen, distinguished by the board band of white ribbon on the hat, the War Department sought to increase the supply of aviation engineer officers and for a number of months there were large groups of these men, all with commissions, who were engaged in work related to the mechanics of airplane construction. These men received their instruction in part in the machine tool laboratories and the handling of material was no small part of the curriculum. It is presumed that the purpose of these officers was to secure training in the proper care of airplanes, establish sufficient lines of supplies, and to ensure efficient repairs that the machines might be structurally safe for the birdmen to use. This school lasted for three or four months and was followed by the return of the white-banded aviators. Within a month or two the number of the latter has been becoming smaller and by the middle of September they will all be gone.

School Grew Rapidly

In numbers the school has been quite large, it pushed the School for Deck Officers out of the Refrigeration Laboratory through its space needs, and for some time past has had its classes in the Faculty Room. For the use of its courses there was built the large air-drome, four or five engine sheds and the motor shed and some special items like the noxious gas shed, which will now be ready for use of some other company.

While the School of Military Aeronautics will cease at Cambridge, the U. S. Navy with its Technology Naval Aviation School, will find in the vacated quarters a good deal of space available for its needs, being continually a growing school. It is expected that the Naval and Marine fliers will occupy the dormitories in Civil Engineering, and in this way avoid the necessity of building new ones which would presently be called for according to present instructing staff of the Institute will be able to move back into its old offices and this in time to care for the incoming students who will be, it is suggested, more numerous than ever under the influence of the Student Army Training Corps, which will probably be developed in plan by the time of the regular enrollment for the first term in the fall.

Samuel Gompers says: "There are still many to whom this world cataclysm has so little meaning that they are still pursuing luxuries and self-indulgence." Are you one of these people, or do you save to the utmost of your ability and with your savings buy War Savings Stamps?

The philosophy of the W. S. S. is save, save, save.

NEW MEDALS AND BADGES FOR AMERICAN RED CROSS

The American Red Cross has issued from headquarters instructions concerning Red Cross medals and badges. The official medal in silver, bronze, or gold, has been formally adopted by the Red Cross and may be awarded to such persons as give important volunteer service. The president of the corporation will bestow this in the name of the Red Cross.

Three Standard Badges

There are three standard badges—the enrolled Red Cross nurse badge, the enrolled Red Cross dietitian badge, and the membership badge. Bars denoting the class of service may be placed above any of these three standard badges. For instance, the insignia for home defense nurses shall be a white enamel bar bearing the words "home defense nurse," and shall be used in connection with a standard membership badge. The lifesaving corps has a similar bar with the words "life-saving corps." Red Cross physicians, surgeons, and other Red Cross medical practitioners may wear a white enamel bar above the standard membership badge, with the words "medical service."

Field Service Badge

Field service in the war zone or in the military camps in the United States or specially meritorious service in the civil areas in times of disaster will be recognized by a bronze bar bearing appropriate words and placed below the standard badge. First-aid contest awards will have a similar bar below the membership badge. The life-saving corps has a silver allow bar.

General Service Insignia

General service with the Red Cross will be recognized by a service bar which will be worn independently or below a standard membership badge. It is authorized for award to all classes of Red Cross workers at national headquarters, at division headquarters, or at chapters, branches, or auxiliaries, both volunteer and paid, and including officers, clerks, and those engaged in chapter or division workrooms. This bar is of white enamel, bears a red Greek cross in the center, and is given after four months of service comprising not less than 200 hours. On completion of the next period of service this bar may be exchanged for a similar bar with a tiny star at each end. Bars may be exchanged as the period of service grows, so that each star awarded indicates not less than 800 hours' work and a five-star bar indicates not less than 4000 hours' work. Service periods will be counted from January 1, 1918.

CONTRACT WITH CHINA TO BUILD 4 MERCHANT SHIPS

Chairman Hurley Makes Announcement to Peking Government

The State Department recently transmitted to the Chinese Government the following message from Edward N. Hurley, chairman of the United States Shipping Board:

"The United States Shipping Board today completed negotiations for the construction of a number of merchant vessels at the Chinese Government's shipyard at Shanghai. This happy arrangement enables Chinese industry to become still more effective in support of our splendid armies who are now advancing toward their assured victory. By making ships, China will be directly making war upon the common enemy. The occasion is one of good augury of future industrial and commercial cooperation between your great country and the United States, and I confidently believe will more firmly cement the traditional friendship between the two peoples."

It was a few days ago that the Shipping Board announced negotiations by which the Government yard at Shanghai known as the Kiangnan Dock & Engine Co. were to receive contracts for four steel cargo vessels of 10,000 tons each and options for the building of 50,000 additional tons of steel freighters.

Expenditure of \$30,000,000

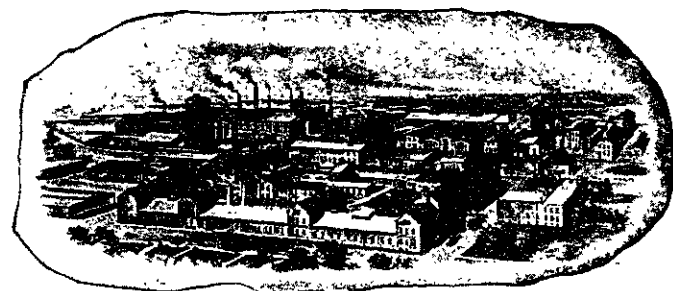
This program will involve an expenditure of \$30,000,000. About 35,000 tons of steel will be shipped from this country to China. It is expected that the deliveries will begin about six months after the steel has been received. All iron castings will be obtained in China, leaving only steel plates and shapes to be supplied from here, one ton of steel making about three tons of shipping. In his effort to rapidly upbuild American merchant marine and in his search for places where ships could be constructed, Chairman Hurley found that China was well equipped for a substantial contribution for this work.

The Kiangnan yard has twelve ways with all necessary shops and a dry dock capable of admitting vessels up to 544 feet. In this yard were repaired all damaged German and Austrian vessels which had been interned by China when that nation entered the war.

Our men in the trenches and in the submarine chasers are doing their part. Are you doing your part? Buy War Savings Stamps to your utmost capacity.

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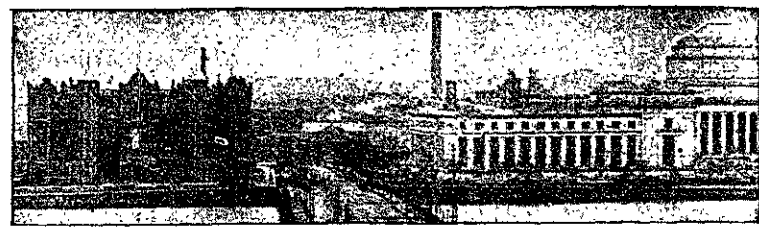
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It's a fight as the President said, "to the last dollar, the last drop of blood."

Americans, know the essential war facts; Your government has itself undertaken to give them to you. The Committee on Public Information has published a series of pamphlets, as follows. Any two sent upon request to the Committee on Public Information, Washington, D. C.

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The President's Flag Day Speech, With Evidence of Germany's plans. 32 pages.
The War Message and the Facts Behind it. 32 pages.
The Nation in Arms. 16 pages.
Why We Fight Germany. War, Labor and Peace.

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